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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,082	07/16/2003	Luis O. Tedeschi	10845-147	7721

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EXAMINER

MILLER, MARINA I

ART UNIT PAPER NUMBER

1631

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,082	TEDESCHI ET AL.	
	Examiner	Art Unit	
	Marina Miller	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/16/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-27 are pending. An action on merits of claims 1-27 follows.

Information Disclosure Statement

Information Disclosure Statement (IDS) filed 7/16/2003 has been considered by the examiner.

Claim Rejections - 35 USC § 101

Non-Statutory Subject Matter

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8 and 22-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-8 are directed to the method for managing the individual feeding of cattle.

“However, not all processes are statutory under 35 U.S.C. 101.” *See* MPEP § 2106. The disclosed method does not recite physical steps to be performed in order to achieve the goal of the method. The steps are merely those of data manipulation. The methods do not actually transform a set of data, but only recite reiterative statistical calculations.

When a computer-implemented method does not recite a physical step or an actual transformation of data, it may be statutory when the claimed invention as a whole accomplishes a practical application. “That is, it must produce a useful, concrete and tangible result.” *See* MPEP § 2106. In the instant case, the steps of the method recite a predicted daily feed requirement and a predicted daily weight gain. The claims do not recite any definite structure or function. The

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claims do not recite a tangible expression of the prediction, nor any recitation of an actual (*i.e.*, concrete) result in a form useful to one skilled in the art. As no concrete, tangible, and useful result is clearly defined/recited in the claims, the claims do not recite a “practical application” and are not statutory.

Claims 22-27 are directed to a system for managing feeding cattle comprising means for predicting, repeating, and adjusting. The elements of the system are recited by using means-plus-function language, and therefore are limited to structural/functional elements disclosed in the specification. The specification discloses that the instant method may be implemented in hardware and software; for example, in one or more computer programs executing on a processor or in a program code applied to data (p. 16). Therefore, the system of claims 22-27 may be interpreted as a computer program. A computer program is not a physical “thing.” It is neither a computer component nor a statutory process, as it is not “act” being performed. “Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized.” *See* MPEP § 2106.

Lack of Utility

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 9-10 and 16-17 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

Claims 9-10 and 16-17 are directed to a system and a computer readable medium, respectively, for executing method steps of repeatedly obtaining daily feed requirements and a daily weigh gain. The specification discloses that results of the invention may be used for obtaining optimal beef quality and managing individual animals in a feedlot. However, the disclosed utility is not applicable to the instant claims. For example, the system and the computer readable medium execute steps of obtaining a feed requirement and a weight gain. While a computer system is widely used for the computation of different parameters important for managing a feedlot, absent any disclosure about specific use of the system for optimization, correlation, or prediction based on obtained data, there does not appear to be any immediate benefit to a member of the public for using the system, and hence, there is no utility for the system and the computer readable medium.

Claim Rejections - 35 USC § 112

First paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentations is “undue.” These factors include, but are not limited to:

- a) The breadth of the claims;
- b) The nature of the invention;

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- c) The state of the prior art;
- d) The level of one of ordinary skill;
- e) The level of predictability in the art;
- f) The amount of direction provided by the inventor;
- g) The existing of working examples; and
- h) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988).

The Board also stated that although the level of skill in molecular biology is high, the results of experiments in genetic engineering are unpredictable. 858 F.2d at 740. While all of these factors are considered, sufficient amount for a prima facie case are discussed below.

Claims 1-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

a) Claims 1-27 are broad. Claims 1 and 22 are drawn to a method and a system for managing feeding of cattle comprising a step of predicting a daily feed requirement. "Predicting" requires knowledge of the end goal/result and parameters of prediction (*e.g.*, food requirements for the meat/fat/milk/hide/progeny production). In the instant case, neither claims nor the specification determine the limitation "feed requirements" (*see* rejection under 35 U.S.C. 112, second paragraph below), *i.e.*, the end condition is undetermined. The instant specification does not provide specific guidance to practice the invention because it does not disclose how to predict feed requirements without knowing parameters for prediction and the end goal.

Further, claims 1, 3-4, 8-12, 16-19, and 22-25 are drawn to a method, a system, and a computer readable medium for managing feeding of cattle wherein genotype, diet, and

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environmental differences are taken into account. The instant specification does not provide specific guidance to practice the invention because it does not disclose how to “take into account” (*e.g.*, using an algorithm, a model, a parameter, etc.) nor how to take into account “genotype” and “environmental differences” when genotype and environmental differences are not even defined (*i.e.*, to take into account unknown parameters).

Also, claims 7 and 26 are drawn to a method and a system for managing feeding cattle wherein the predicted daily feed requirement is adjusted until predicted daily gain substantially equals actual daily gain. In the instant case, “adjusting” the predicted requirement requires knowledge of an actual gain. Neither claims nor specification disclose physical steps of determining the actual gain. The instant specification does not provide specific guidance to practice the invention because it does not disclose how to “adjust” without knowing the conformity parameter.

b) The invention is drawn to a method, a system, and a computer readable medium for managing feeding cattle.

c) Prior art analysis shows that predicting requires knowledge of a goal to be predicted. *See*, for example, Fox, *J. Anim. Sci.*, 70:3578-96 (1992), *see* topics on p. 3581, 3582, 35,83, 3584; Brethour, U.S. Patent 5,960,105 (abstract). Prior art analysis further shows that predicting is based on specific models and algorithms. *See* Fox, *Proc. Cornell Nutr. Conf. For Feed Manuf.*, (Oct. 16-18, 2001), p. 67-68. Prior art also shows adjusting of a predicted value by comparison with actual measurements. *See* Brethour, U.S. Patent 5,960,105, claim 1-7.

d) The skill of those in the art of bioinformatics is high.

e) Prior art supports complex nature of the predicting feeding cattle. *See*, for example, Fox, *Proc. Cornell Nutr. Conf. For Feed Manuf.*, (Oct. 16-18, 2001), p. 64, 68; Brethour, U.S. Patent 5,960,105, col. 10-12.

f) The specification does not provide guidance for predicting generic feeding requirements, taking into account genotype, diet, and environmental differences without using a specific algorithm/model and specific parameters, and measuring actual gain.

g) The specification provides a working example for predicting feed requirements without specifically stating the requirements. The example discloses using a model and the Cornell Net Carbohydrate and Protein System for predicting and algorithms for computing (*i.e.*, taking into account) without directing how to take into account genotype, diet, and environmental data. The example requires entering individual animal information (*e.g.*, initial and final body weight, ultrasound fat depth, etc.) into a program, and therefore requires actual measuring. Thus, the example requires additional steps/information that are not recited in the instant claims.

h) In order to practice the claimed invention, one skilled in the art must randomly select feeding requirements, models, and algorithms for prediction, and guess what parameters to use for the prediction and adjustment. The prior art supports the fact that these parameters and algorithms are necessary. As the claims do not recite any models or algorithms, parameters for adjustment, etc., and the example of the specification indicates that additional steps are required, it would require undue experimentation to practice the instant claimed method.

Due to the undue experimentation required to obtain the goal of the invention, the lack of directions presented in the specification, the complex nature of the invention, the state of the

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prior art, and the limited usefulness of a working example, the specification fails to teach one skilled in the art how to use the claimed method for one individual at a time.

Second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-8 are directed to a method for managing the individual feeding of cattle. Claim 1 recites in the preamble “a method for managing.” Claims 2-8 depend from claim 1. The method steps of claims 1-8 are directed to predicting, repeating, adjusting the predicted values, and calculating. Claims 9-27 are directed to a system and a computer readable medium for managing feeding of cattle. The system executes steps of obtaining, predicting, and repeating. “Managing” is broadly interpreted as directing, providing, or handling. It is not clear if the preamble is intended to limit the method steps because the method does not actually recite any steps of directing, feeding, handling, *etc.* Further, steps (a) and (b) of the method do not recite any interrelationship, and therefore it is not clear what relationship is intended between steps. Thus, claims 1-27 are indefinite.

Claims 1, 9, and 22 recite in the preamble “feeding of cattle.” However, step (a) recites “an individual animal.” Dependent claims 3, 4, 8, 10-12, and 23-25 also recite an individual

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animal. It is not clear if the preamble is intended to limit the method steps to “cattle” or the steps are directed to other animals as well. Thus, claims 1-15 and 22-27 are indefinite.

Claims 1, 9, 16, and 22 recite “a daily feed requirement.” It is not clear what limitation is intended by “feed requirement,” *e.g.*, the requirement for an optimal milk production, meat/fat content, weight gain, maintenance of life, hair color, health of progeny, etc. Thus, claims 1-8 are indefinite.

Claims 1, 3, 4, 9-12, 16-19, and 22-25 recite “environmental differences.” In order to evaluate differences, one has to know a standard with which to compare current conditions or at least two conditions that are to be compared with each other. It is not clear what limitation is intended by “differences,” *e.g.*, differences in temperature during winter and summer, differences between night and day, differences in the conditions inside the barn *v.* outside the barn, or animal characteristics (fat, skin, or hair coat at different point of the development), etc. While a claim may be broad (*i.e.*, encompasses multiple environmental conditions), one skilled in the art must still be apprised what applicant intends to differentiate. Thus, claims 1-27 are indefinite.

Claim 1, 3, 4, 9-12, 16-19, and 22-25 recite “genotype differences.” The phrase “genotype differences” usually is interpreted by those skilled in the art to mean genomic mutations, SNPs, or polymorphism. As neither claims nor specification defines the meaning of “genotype differences,” and it is unclear which, if any, of the art-recognized interpretations is intended by applicant for the phrase, claims 1-27 are indefinite.

Claims 7 and 26 recite “adjusting the predicted daily feed requirement until predicted daily gain substantially equals actual daily gain.” This step recites an “actual” gain, and therefore may be interpreted as comprising a physical step of measuring an actual weight. However,

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neither of the method steps actually recites a step of obtaining actual weight. As it is not clear what limitation is intended, claims 7 and 26 are indefinite.

Claim 8 recites “individual animal characteristics.” It is not clear what limitation is intended by “characteristics,” thus claim 8 is indefinite.

Claim 8 recites “adjusted shrink body weight.” The term “adjusted” means to conform to a standard or a new condition. Neither claims nor specification define the conformity condition, and therefore claim 8 is indefinite.

Claims 1, 3, 4, and 8 recite “taking into account.” It is not clear what limitation is intended by “taking into account,” *e.g.*, using a specific algorithm, specific criteria, or specific combination of factors/characteristics. Therefore, claims 1-8 are indefinite.

Claims 4, 12, 19, and 25 recite “performance information.” Neither claims nor the specification define this limitation, and therefore claims 4, 12, 19, and 25 are indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-9, 10-14, 16, 18-22, and 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Fox, Presentation at the 33d BIF Conference, July 11-14 (2001).

Fox discloses a computer-based method for managing feeding cattle comprising steps of predicting feed requirements of an individual animal and a daily weight gain using a model and

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taking into account genotype, diet, and environmental differences (p. 3-5 and 7-8). Fox discloses predicting number of days to achieve a target finished body weight (table 2 and 8). Fox discloses predicting performance information (p. 4 and table 4-5, 8). Fox discloses predicting carcass weight (p. 12). Fox discloses predicting daily and accumulated feed cost (p. 2, table 1). Fox discloses calculating empty body fat (EBF) (table 7, fig. 1-2, and p. 9-10). Fox discloses calculating shrunk body weight (p. 15). Fox discloses a computer system because his method is performed by a program (p. 1). Thus, Fox anticipates claims 1, 3-9, 10-14, 16, 18-22, and 24-27.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Loerch, *J. Anim. Sci.*, 76(2):371-377 (1998).

Loerch discloses programming food intake on cattle performance and carcass characteristics comprising steps of predicting (a) a daily feed requirement and (b) a daily weight gain (*see* p. 371 and 373, right col. for general method, and *Experimental Procedures* and table 1 for specific steps). Loerch uses crossbred steer calves for predicting (genotype considerations) and takes into account environmental differences (*e.g.*, time of the year, open-sided barn, concrete floors, metal gates, *etc.*) (p. 372, left col.). Loerch discloses repeating steps (a-b) until a target weight is reached (p. 372, right col. and a paragraph connecting p. 373-374). Loerch discloses predicting number of days to achieve a target weight (table 3-5). Loerch discloses predicting performance information for an animal wherein performance comprises feed intake and feed efficiency (*see* paragraphs connecting p. 372-373 and 373-374 and p. 375, table 5). Loerch discloses determining final body weight ("BW", p. 372, right col.) and carcass characteristics (p. 372, right col.) including predicting carcass weight (p. 374, table 4). Loerch

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discloses predicting daily and accumulated feed cost (p. 376). Loerch discloses adjusting the predicted daily feed requirement until predicted daily gain substantially equals actual daily gain (p. 375, right col.). Thus, Loerch anticipates claims 1-7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fox, Presentation at the 33d BIF Conference, July 11-14 (2001), as applied to claim 1, 3-9, 10-14, 16, 18-22, and 24-27 above, in view of Tedeschi, *J. Dairy Sci.*, 83:2139-2148 (Sept. 2000).

Fox discloses a method for managing feeding of cattle, as set forth above.

Although Fox discloses using the Cornell Net Carbohydrate and Protein System (CNCPS), he does not specifically disclose that the CNCPS comprises an iterative step.

Tedeschi discloses using the CNCPS for diet optimization and, specifically that the CNCPS model is iterative until variation in animal response and diet change is within an acceptable deviation (p. 2140).

It would have been obvious to one skilled in the art at the time of the invention to modify the method and the system of Fox to use iterative steps, such as taught by Tedeschi, where the motivation would have been to optimize diet for specific situations, as taught by Tedeschi, p. 2140.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Loerch, *J. Anim. Sci.*, 76(2):371-377 (1998), as applied to claim 1 and 3-5 above, in view of Perry, *J. Anim. Sci.*, 75:300-307 (1997).

Loerch teaches a method of claims 1-7, as set forth above. Loerch's objective was to determine accuracy of the National Research Council (NRC) model for predicting feed consumption and carcass changes, p. 371-372 and 373, left col.

Although Loerch teaches calculating carcass fat (p. 374, right col.) and backfat (p. 376 and table 6), he does not specifically disclose calculation of empty body weight and shrink body weight.

Perry discloses a computer-based method for predicting carcass composition and individual feed requirements for different breeds of cattle by adopted by the NRC (p. 302). Perry teaches calculating empty body weight and shrink body weight (p. 302-303).

It would have been obvious to one skilled in the art at the time of the invention to modify the method of Loerch to calculate empty body weight and shrink body weight, such as taught by Perry, where the motivation would have been to optimize a system for individual allocation of feed consumption and prediction of carcass changes, as taught by Perry, p. 300.

Claims 9-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loerch, *J. Anim. Sci.*, 76(2):371-377 (1998), as applied to claim 1-7 above, in view of Pratt, U.S. Patent 5,673,647.

Loerch discloses a method of claims 1-7, as set forth above.

Loerch does not disclose a computer system, a program, and a computer readable medium for running the method.

Pratt discloses an automated method and a computer system for managing cattle comprising an individual animal parameters calculation (col. 20, line 61 through col. 21, line 44; *see* for a system col. 28, line 59 through col. 32, line 64; *see* for computer program section *E. Computer program*, starting at col. 32, line 65). Pratt discloses projecting animal performance, feed consumption, cost of feed and handling, physical characteristics, optimal market data, carcass data and profit on an individual animal basis (col. 5, line 25-31). Pratt discloses measuring and calculating different animal characteristics (*see Cattle Processing Example* and *Individual Animal Final DTF Calculation*, starting at col. 17, line 60). Pratt discloses taking into account animal characteristics (col. 5-6) and environmental factors (air temperature, wind, and pen conditions, col. 29, line 17-20). Pratt also discloses projecting optimal finish weight and amount of day required to reach this weight (col. 18, line 41-65, and col. 20, line 49). Pratt discloses projecting individual animal performance (*see Cattle Processing Example*, starting at col. 17). Pratt discloses obtaining daily feed requirements and weight gain (col. 18, line 7-67). Pratt discloses saving in feed cost (col. 21, line 1-44). Pratt discloses a system with remote access and distributed processing (col. 6, line 1-3 and col. 31, line 31-44).

It would have been obvious to one skilled in the art at the time of the invention to modify the method of Loerch to run his method on a computer, such as taught by Perry, where the motivation would have been to optimize managing individual animals, as taught by Pratt, col. 5, line 15-16.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Miller whose telephone number is (571)272-6101. The examiner can normally be reached on 8-5, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph. D. can be reached on (571)272-0718. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM

**MARJORIE A. MORAN
PRIMARY EXAMINER**

Marjorie A. Moran
7/8/05

Marina Miller
Examiner
Art Unit 1631